

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. - 7. (canceled)

8. (currently amended) A method of discarding a prioritized fair share of traffic of network connections, the method comprising:

receiving traffic of at least a particular network connection;

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein a buffer in the fixed buffer allocation space is associated with a fixed buffer allocation queue identification, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a separate portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein a separate buffer in the prioritized fair share buffer space is associated with a separate prioritized fair share queue identification, wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the separate buffer, the second discard scheme being different than the first discard scheme; and

discarding a the portion of the fixed buffer allocation space or the separate portion of the prioritized fair share buffer space as lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the separate prioritized fair share queue identification associated with the lowest priority traffic.

9. (original) The method of Claim 8, wherein the fixed buffer allocation space is configured to provide a semi-permanent minimum buffer space to each network connection.

10. (original) The method of Claim 8, wherein the fixed buffer space is configured to provide a guaranteed minimum buffer space to each network connection.

11. (original) The method of Claim 8, wherein the shared buffer space is configured to provide a non-guaranteed buffer space to each network connection, and is configured to be shared amongst network connections.

12. (original) The method of Claim 10, wherein each prioritized fair share queue identification includes a relative ranking amongst the prioritized fair share queue identifications.

13. (original) The method of Claim 11, wherein a portion size for each network connection is based upon a weighting value assigned to each network connection.

14. (original) The method of Claim 11, wherein the step of filling a portion of the prioritized fair share buffer space comprises comparing buffer usage of the particular network connection with buffer usages of other network connections to obtain a weighting value for the particular network connection.

15. (original) The method of Claim 8, further comprising:  
receiving traffic of at least one other network connection;  
filling another portion of the fixed buffer allocation space with traffic of the at least one other network connection; and  
filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

16. (original) The method of Claim 15, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of the at least one other network connection, and wherein the discarding step comprises discarding traffic of the particular network connection.

17. (original) The method of Claim 8, wherein the step of filling the portion. of the prioritized fair share buffer space comprises filling substantially all of the prioritized fair

share buffer space, and wherein the discarding step is triggered by the step of filling substantially all of the prioritized fair share buffer space.

18. (currently amended) A computer-readable medium carrying one or more sequences of one or more instructions for discarding a prioritized fair share of traffic of network connections, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving traffic of at least a particular network connection;

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein a buffer in the fixed buffer allocation space is associated with a fixed buffer allocation queue identification, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a separate portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein a separate buffer in the prioritized fair share buffer space is associated with a separate prioritized fair share queue identification, wherein the prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the separate buffer, the second discard scheme being different than the first discard scheme; and

discarding a the portion of the fixed buffer allocation space or the separate portion of the prioritized fair share buffer space as lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the separate prioritized fair share queue identification associated with the lowest priority traffic.

19. (original) The computer-readable medium of Claim 18, wherein the fixed buffer allocation space is configured to provide a semi-permanent minimum buffer space to each network connection.

20. (original) The computer-readable medium of Claim 18, wherein the fixed buffer space is configured to provide a guaranteed minimum buffer space to each network connection.

21. (original) The computer-readable medium of Claim 18, wherein the shared buffer space is configured to provide a non-guaranteed buffer space to each network connection, and is configured to be shared amongst network connections.

22. (original) The computer-readable medium of Claim 20, wherein each prioritized fair share queue identification includes a relative ranking amongst the prioritized fair share queue identifications.

23. (original) The computer-readable medium of Claim 21, wherein a portion size for each network connection is based upon a weighting value assigned to each network connection.

24. (original) The computer-readable medium of Claim 21, wherein the step of filling a portion of the prioritized fair share buffer space comprises comparing buffer usage of the particular network connection with buffer usages of other network connections to obtain a weighting value for the particular network connection.

25. (original) The computer-readable medium of Claim 18, wherein the instructions further cause the processor to carry out the steps of:

receiving traffic of at least one other network connection;

filling another portion of the fixed buffer allocation space with traffic of the at least one other network connection; and

filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

26. (original) The computer-readable medium of Claim 25, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of the at

least one other network connection, and wherein the discarding step comprises discarding traffic of the particular network connection.

27. (original) The computer-readable medium of Claim 18, wherein the step of filling the portion of the prioritized fair share buffer space comprises filling substantially all of the prioritized fair share buffer space, and wherein the discarding step is triggered by the step of filling substantially all of the prioritized fair share buffer space.

28. (currently amended) An integrated circuit configured to discard a priority fair share of traffic of network connections, the integrated circuit comprising:

controlling circuitry configured to control operations of:

filling a portion of a fixed buffer allocation space with traffic of the particular network connection, wherein a buffer in the fixed buffer allocation space is associated with a fixed buffer allocation queue identification, wherein the fixed buffer allocation space is associated with a first discard scheme which determines if the traffic will be accepted into the buffer;

filling a separate portion of a prioritized fair share buffer space with traffic of the particular network connection, wherein a separate buffer in the prioritized fair share buffer space is associated with a separate prioritized fair share queue identification, wherein the separate prioritized fair share buffer space is associated with a second discard scheme which determines if the traffic will be accepted into the separate buffer, the second discard scheme being different than the first discard scheme; and

discarding a the portion of the fixed buffer allocation space or the separate portion of the prioritized fair share buffer space as lowest priority traffic of the particular network connection based on the first discard scheme or the second discard scheme, the first or second discard scheme determined based on the fixed buffer allocation queue identification or the separate prioritized fair share queue identification associated with the lowest priority traffic.

29. (original) The method of Claim 28, wherein the controlling circuitry further includes comparison circuitry configured to compare a priority of the particular network

connection with priorities of other network connections to obtain a weighting value for the particular network connection.

30. (original) The integrated circuit of Claim 28, wherein the controlling circuitry is further configured to control operations of:

filling another portion of the fixed buffer allocation space with traffic of at least one other network connection; and

filling another portion of the prioritized fair share buffer space with traffic of the at least one other network connection.

31. (original) The integrated circuit of Claim 28, wherein the traffic of the particular network connection has a lower quality of service value than that of traffic of at least one other network connection, and wherein the controlling circuitry is further configured to control discarding of traffic of the particular network connection.

32. (original) The integrated circuit of Claim 28, wherein the controlling circuitry is further configured to trigger the discard operation when a local buffer is substantially filled, wherein the local buffer includes the fixed buffer allocation space and the reserved buffer space.

33. (original) The integrated circuit of Claim 30, wherein the controlling circuitry is further configured to trigger the discard operation when the prioritized fair share buffer space is substantially filled.

34. - 36. (canceled)

37. (previously presented) A method of allocating memory buffer space for traffic of network connections, the method comprising:

designating fixed buffer allocation space;

associating buffers in the fixed buffer allocation space with fixed buffer allocation queue identifications;

associating the fixed buffer allocation space with a first discard scheme, wherein the first discard scheme determines if the traffic of the network connections will be accepted into the buffers in the fixed buffer allocation space or if the traffic of the network connections will be discarded;

designating prioritized fair share buffer space;

associating buffers in the prioritized fair share buffer space with prioritized fair share queue identifications;

prioritizing the prioritized fair share queue identifications to have relative rankings amongst the prioritized fair share queue identifications;

associating a particular network connection in a first group of network connections with a particular prioritized fair share queue identification;

reserving a portion of the prioritized fair share buffer space for the first group of network connections;

allocating unreserved buffers in the prioritized fair share buffer space for the first group of network connections, wherein network connections in the first group of network connections associated with higher priority prioritized fair share queue identifications have access to a greater portion of the unreserved buffers in the prioritized fair share buffer space than network connections in the first group of network connections associated with lower priority prioritized fair share queue identifications;

associating the prioritized fair share buffer space with a second discard scheme, wherein the second discard scheme determines if the traffic of the network connections will be accepted into the buffers in the prioritized fair share buffer space or if the traffic of the network connections will be discarded, and wherein the second discard scheme is different than the first discard scheme.

38. (previously presented) The method of Claim 37, further comprising prioritizing the fixed buffer allocation queue identifications to have relative rankings amongst the fixed buffer allocation queue identifications.

39. (previously presented) The method of Claim 37, further comprising associating a particular network connection in a second group of network connections with a particular fixed buffer allocation queue identification.

40. (previously presented) The method of Claim 39, further comprising reserving a portion of the fixed buffer allocation space for the second group of network connections.

41. (previously presented) The method of Claim 40, further comprising allocating unreserved buffers in the fixed buffer allocation queue identifications, wherein the particular network connection in the second group of network connections associated with the particular fixed buffer allocation queue identification has access to the unreserved buffers in the particular fixed buffer allocation queue identification.

42. (previously presented) The method of Claim 37, wherein a weighting value for each network connection in the first group of network connections is determined, and wherein a first network connection in the first group of network connections having a higher weighting value than a second network connection in the first group of network connections is proportionately allocated a greater portion of the unreserved buffers in the prioritized fair share buffer space.